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| 09/998,599 | 11/16/2001 | Shinji Uebayashi | 15689.91 | 4705 |

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| ART UNIT | PAPER NUMBER |
|---|---|
| 2664 | |

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/998,599 | UEBAYASHI ET AL. | |
| | Examiner | Art Unit | |
| | Chirag G. Shah | 2664 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *11/18/05*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *16-19,21 and 31-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2-10,13 and 28-30* is/are allowed.

6)☒ Claim(s) *16-19,21 and 33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 16-19 and 31-32 rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz in view of Vialen et al. (U.S. Patent No. 6,882,727), hereinafter referred as Vialen and further in view of Hwang et al. (U.S. Patent No. 6,791,963), hereinafter referred as Hwang .

Regarding claim 16, Schulz discloses in **fig. 3** of a communication [**universal mobile telecommunication system standard with an FDD mode or a TDD mode, see fig. 3 and col. 4, line 1**] method comprising:

a step for including information of a signal based on a TDD method in a signal based on an FDD method [**the BS sends organization information oi4 signal (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56 and claim 1**] and

an FDD transmission step for transmitting the signal based on the FDD method [**the base station (BS) sends organization information oi1, oi2, oi3, oi4 etc., in a**

**control channel via a first radio interface FS1 (FS1 uses UMTS FDD Mode, see fig. 3), see col. 4, lines 12-21, 43-56 and claim 1**].

Schulz discloses of that the BS sends organization information oi4 (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel (signal) respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56, and claim 1. *Schulz fails to disclose wherein the information of the signal includes information of a synchronization channel based on the TDD method.* Vialen teaches in col. 7, lines 41-45 of using physical layer transport control channels in FDD and TDD modes. Vialen discloses in col. 7, lines 45-55 and col. 8, lines 5-10 of utilizing an SCH down-link channel for broadcasting synchronization information to several user equipments in the TDD mode. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include the features of the downlink signal having SCH channel based on TDD as taught by Vialen. One is motivated as such in order to provide handover control message including timing, synchronization and paging to the user equipment *(Vialen, col. 4, lines 16-20)*. Schulz discloses in col. 5, lines 37-48 wherein the communication method further comprises a TDD transmission step for transmitting the signal [144kbit/s data service] between base station and mobile station based on the TDD method. Schulz fails to disclose *the signal based on the TDD method includes a signal of a communication channel and both or one of a signal of a synchronization channel and a signal of a common control channel.*

Hwang teaches in col. 3, lines 57-58 of peer to peer communication between mobile station and a network. Hwang discloses in col. 3, lines 57-65 and fig. 2 that the transferring of communication data between mobile station and a base station is accomplished through logical

channels that are synchronization control channels (SCCH), BCCH, PCCH and common control channel (CCCH) and based on a TDD method. Furthermore, as illustrated in fig. 2, and disclosed col. 3, lines 65 to col. 4, lines 20 that service data is transferred using a dedicated control channel DCCH. This establishes that logical control channels such as SCCH, CCCH along with data is transferred between a mobile station and a network. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include logical control channels passing data and control information as taught by Hwang. One is motivated as such in order to provide signaling and controlling support for different formats of service data units for successively coupling mobile station to the network *(Hwang, col. 3, lines 1-14).*

Regarding claim 17, Schulz discloses all the limitations of claim 15. *Schulz fails to explicitly disclose wherein the information of the synchronization channel includes information relating to at least one of a code, a frequency and timing of the synchronization channel.* Vialen discloses in col. 7, lines 45-62 wherein the information of the synchronization channel [SCH physical transport channel] includes information relating to at least one of a code, a frequency and a timing of the synchronization channel for TDD mode. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include the features of the downlink signal having SCH channel based on TDD as taught by Vialen. One is motivated as such in order to provide handover control message including timing and synchronization to the user equipment *(Vialen, col. 4, lines 16-20).*

Regarding claim 18, Schulz discloses in **fig. 3** of a communication **[universal mobile telecommunication system standard with an FDD mode or a TDD mode, see fig. 3 and col. 4, line 1]** method comprising:

a step for including information of a signal based on a TDD method in a signal based on an FDD method **[the BS sends organization information oi4 signal (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56 and claim 1]** and

an FDD transmission step for transmitting the signal based on the FDD method **[the base station (BS) sends organization information oi1, oi2, oi3, oi4 etc., in a control channel via a first radio interface FS1 (FS1 uses UMTS FDD Mode, see fig. 3), see col. 4, lines 12-21, 43-56 and claim 1]**.

Schulz discloses of that the BS sends organization information oi4 (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel (signal) respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56, and claim 1. *Schulz fails to disclose wherein the information of the signal includes information of a common control channel based on the TDD method.* Vialen teaches in col. 7, lines 41-45 of using physical layer transport control channels in FDD and TDD modes. Vialen discloses in col. 8, lines 25-34 of utilizing a CCCH (common control channel) bi-directional channel for transmitting control information between network and to several user equipments in the possible TDD mode. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include the features of the bi-directional

signal having CCCH channel based on TDD as taught by Vialen. One is motivated as such in order to provide handover control message including timing, synchronization between the network and the user equipments *(Vialen, col. 4, lines 16-20)*. Schulz discloses in col. 5, lines 37-48 wherein the communication method further comprises a TDD transmission step for transmitting the signal [144kbit/s data service] between base station and mobile station based on the TDD method. Schulz fails to disclose *the signal based on the TDD method includes a signal of a communication channel and both or one of a signal of a synchronization channel and a signal of a common control channel.*

Hwang teaches in col. 3, lines 57-58 of peer to peer communication between mobile station and a network. Hwang discloses in col. 3, lines 57-65 and fig. 2 that the transferring of communication data between mobile station and a base station is accomplished through logical channels that are synchronization control channels (SCCH), BCCH, PCCH and common control channel (CCCH) and based on a TDD method. Furthermore, as illustrated in fig. 2, and disclosed col. 3, lines 65 to col. 4, lines 20 that service data is transferred using a dedicated control channel DCCH. This establishes that logical control channels such as SCCH, CCCH along with data is transferred between a mobile station and a network. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include logical control channels passing data and control information as taught by Hwang. One is motivated as such in order to provide signaling and controlling support for different formats of service data units for successively coupling mobile station to the network *(Hwang, col. 3, lines 1-14)*.

Regarding claim 19, Schulz discloses all the limitations of claim 15. Schulz fails to explicitly disclose wherein the information of the common control channel includes information relating to at least one of a code, a frequency and a timing of the common control channel. Vialen discloses in col. 8, lines 25-34 a CCCH is transport bi-directional channel for transmitting control information between the network and the user equipments. Since CCCH is a transport control channel based on col. 7, lines 45-62, the information of the common control channel [CCCH physical transport channel] can thus include information relating to at least one of a code, a frequency and a timing of the synchronization channel for TDD mode. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include the features of the downlink bi-directional signal having CCCH channel based on TDD as taught by Vialen. One is motivated as such in order to provide handover control message including timing and synchronization to the user equipment *(Vialen, col. 4, lines 16-20).*

Regarding claim 31, Schulz discloses in **fig. 3** of a communication **[universal mobile telecommunication system standard with an FDD mode or a TDD mode, see fig. 3 and col. 4, line 1]** method comprising:

a step for including information of a signal based on a TDD method in a signal based on an FDD method **[the BS sends organization information oi4 signal (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel**

**respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56 and claim 1]** and

an FDD transmission step for transmitting the signal based on the FDD method **[the base station (BS) sends organization information oi1, oi2, oi3, oi4 etc., in a control channel via a first radio interface FS1 (FS1 uses UMTS FDD Mode, see fig. 3), see col. 4, lines 12-21, 43-56 and claim 1]**.

Schulz discloses of that the BS sends organization information oi4 (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel (signal) respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56, and claim 1. *Schulz fails to disclose wherein the information of the signal includes information of a common control channel based on the TDD method.* Vialen teaches in col. 7, lines 41-45 of using physical layer transport control channels in FDD and TDD modes. Vialen discloses in col. 8, lines 25-34 of utilizing a CCCH (common control channel) bi-directional channel for transmitting control information between network and to several user equipments in the possible TDD mode. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include the features of the bi-directional signal having CCCH channel based on TDD as taught by Vialen. One is motivated as such in order to provide handover control message including timing, synchronization between the network and the user equipments *(Vialen, col. 4, lines 16-20)*. Schulz discloses in col. 5, lines 37-48 wherein the communication method further comprises a TDD transmission step for transmitting the signal [144kbit/s data service] between base station and mobile station based on

the TDD method. Schulz fails to disclose *the signal based on the TDD method includes information of the synchronization channel.*

Hwang teaches in col. 3, lines 57-58 of peer to peer communication between mobile station and a network. Hwang discloses in col. 3, lines 57-65 and fig. 2 that the transferring of communication data between mobile station and a base station is accomplished through logical channels that are synchronization control channels (SCCH), BCCH, PCCH and common control channel (CCCH) and based on a TDD method. Furthermore, as illustrated in fig. 2, and disclosed col. 3, lines 65 to col. 4, lines 20 that service data is transferred using a dedicated control channel DCCH. This establishes that logical control channels such as SCCH, CCCH along with data is transferred between a mobile station and a network. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz in view of Vialen to include logical synchronization channels passing data and control information as taught by Hwang. One is motivated as such in order to provide signaling and controlling support for different formats of service data units for successively coupling mobile station to the network *(Hwang, col. 3, lines 1-14).*

Regarding claim 32, Schulz discloses in **fig. 3** of a communication **[universal mobile telecommunication system standard with an FDD mode or a TDD mode, see fig. 3 and col. 4, line 1]** method comprising:

a step for including information of a signal based on a TDD method in a signal based on an FDD method **[the BS sends organization information oi4 signal (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel**

**respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56 and claim 1]** and

an FDD transmission step for transmitting the signal based on the FDD method **[the base station (BS) sends organization information oi1, oi2, oi3, oi4 etc., in a control channel via a first radio interface FS1 (FS1 uses UMTS FDD Mode, see fig. 3), see col. 4, lines 12-21, 43-56 and claim 1]**.

Schulz discloses of that the BS sends organization information oi4 (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel (signal) respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56, and claim 1. *Schulz fails to disclose wherein the information of the signal includes information of a common control channel based on the TDD method.* Vialen teaches in col. 7, lines 41-45 of using physical layer transport control channels in FDD and TDD modes. Vialen discloses in col. 8, lines 25-34 of utilizing a CCCH (common control channel) bi-directional channel for transmitting control information between network and to several user equipments in the possible TDD mode. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include the features of the bi-directional signal having CCCH channel based on TDD as taught by Vialen. One is motivated as such in order to provide handover control message including timing, synchronization between the network and the user equipments *(Vialen, col. 4, lines 16-20)*. Schulz discloses in col. 5, lines 37-48 wherein the communication method further comprises a TDD transmission step for transmitting the signal [144kbit/s data service] between base station and mobile station based on the TDD method. Schulz fails to disclose *the signal based on the TDD method includes a signal*

*of a communication channel and both or one of a signal of a synchronization channel and a signal of a common control channel.*

Hwang teaches in col. 3, lines 57-58 of peer to peer communication between mobile station and a network. Hwang discloses in col. 3, lines 57-65 and fig. 2 that the transferring of communication data between mobile station and a base station is accomplished through logical channels that are synchronization control channels (SCCH), BCCH, PCCH and common control channel (CCCH) and based on a TDD method. Furthermore, as illustrated in fig. 2, and disclosed col. 3, lines 65 to col. 4, lines 20 that service data is transferred using a dedicated control channel DCCH. This establishes that logical control channels such as SCCH, CCCH along with data is transferred between a mobile station and a network. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include logical control channels passing data and control information as taught by Hwang. One is motivated as such in order to provide signaling and controlling support for different formats of service data units for successively coupling mobile station to the network *(Hwang, col. 3, lines 1-14).*

3. Claims 21 and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz in view of Akerberg (U.S. Patent No. 6,839,333).

Regarding claims 21 and 33, Schulz discloses in **fig. 3** of a communication **[universal mobile telecommunication system standard with an FDD mode or a TDD mode, see fig. 3 and col. 4, line 1]** method comprising:

a step/means for including information of a signal based on a TDD method in a signal based on an FDD method **[the BS sends organization information oi4 signal (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56 and claim 1]** and

an FDD transmission step for transmitting the signal based on the FDD method **[the base station (BS) sends organization information oi1, oi2, oi3, oi4 etc., in a control channel via a first radio interface FS1 (FS1 uses UMTS FDD Mode, see fig. 3), see col. 4, lines 12-21, 43-56 and claim 1]**.

Schulz discloses of that the BS sends organization information oi4 (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel (signal) respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56, and claim 1. Schulz fails to explicitly disclose that the information of the signal based on the TDD method includes at least one of information relating to a position of the signal of the communication channel within a frame of the signal based on the TDD method and information relating to a timing offset between the signal based on the TDD method and the signal based on the FDD method.

Akerberg discloses in fig. 11, col. 8, lines 13-26 of a TDD/FDD system including information relating to a timing offset between signals based on the TDD and FDD method. A dynamic channel selection method locks onto the corresponding channel and adjusts the timing in accordance with the offset. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include the teachings of

acquiring information relating to timing offset between signals based on the TDD and the FDD method as taught by Akerberg. One is motivated as such in order to synchronize and adjust transmission from base stations thus improving transmission quality.

### *Allowable Subject Matter*

4. Claims 2-10, 13 and 28-30 allowed.

### *Response to Arguments*

5. Applicant's arguments with respect to claims 21 and 31-33 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G. Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs
January 23, 2006

Ajit Patel
Primary Examiner